

REMARKS

The Examiner's careful review and examination of the subject application are noted and appreciated.

1. Double Patenting Claim Rejections of Claims 15-18:

The PTO has rejected claims 15-18 under nonstatutory double patenting. However, the claims have not been otherwise allowed by the PTO. Since the scope of the claims could change upon prosecution and amendments of the claims, the claims may not require a terminal disclaimer at the time when the claims are in a condition for allowance. Therefore, Applicants will, if necessary, file a terminal disclaimer when the claims are otherwise in condition for allowance.

2. Claim Amendments:

Claims 1, 9, and 15 have been amended to include cobalt or cobalt oxide as a component to the claimed invention. No new matter has been added by this amendment as support can be found in paragraph 31 and paragraph 45 of the original specification.

Claims 12, 14, 16-19 have also been amended. No new matter has been added by these amendments as these were amended to correct antecedent basis.

New claim 21 has been added. No new matter has been added in the claim as support can be found in paragraph 23 of the original specification.

3. Rejection of Claims 1-19 under 35 U.S.C. 103(a) over Yanagihara et al. (U.S. Pat. No. 5,543,250) in view of Lichtenberg et al. (U.S Patent Number 5,500,309)

Applicants appreciate the Examiner's detailed basis for rejection. Applicants have amended claim 1 and respectfully request reconsideration of the present rejection in light of the amendment and comments below.

Yanagihara teaches a storage battery comprising a coated electrode material with a storage battery (column 2, lines 20-36). The metal substrates were used to prepare the positive paste-type nickel electrodes. Nickel hydroxide powder was mixed into paste form with graphite powder, nickel powder, cobalt powder, an aqueous solution of carboxymethylcellulose and (5) styrenebutadiene rubber aqueous dispersion. (column 5, lines 47-62)

Yanagihara does not teach using graphite of at least 125 nm, nor does Yanagihara teach an amount of graphite greater than 10 weight percent. Applicants teach this specific type of graphite and specific amount of graphite to replace other materials (for example, cobalt) in a battery electrode conductive matrix. In contrast to Applicants' claimed material, Yanagihara's only teaching of graphite is in column 5, lines 50-58 wherein the graphite comprises 5.5 weight % of an electrode paste or 8.4 weight % of the dry components of the electrode paste.

Yanagihara gives no reasons why a skilled practitioner would want to use a specific type of graphite or the specific amounts of graphite claimed by the Applicants (see Applicants' Claim 8). Without a teaching of the specific type of graphite and the specific amount graphite as taught by Applicants, a skilled practitioner would not be motivated to do what Applicants' claim (i.e., using a large level and specific type of graphite to act as a conductive matrix.)

Lichtenberg is relied on to teach a hydride accumulator which can withstand HTSC testing. Lichtenberg further describes graphite with crystallite sizes of at least 180 nm and preferably of at least 200 nm are suitable. (column 2, lines 39-50) The electric accumulator can

have graphite admixed in a proportion by weight of between 1 and 25%. (Claim 6) Lichtenberg does not teach or suggest the use of cobalt as required by Applicants' claim 1.

Applicants teach using cobalt and graphite together to improve electrode performance. (see column 7 line 10 ~ column 8, line 4) In contrast to Applicants' claimed invention, Lichtenberg describes problems associated with using cobalt such as massive irreversible losses in capacity due to the reductive destruction of cobalt. (column 2, lines 28-31) II. Lichtenberg solves the problem caused by cobalt by using "an oxidation-resistant graphite as the conducting medium" so that the inert graphite acts as the conductive matrix. (column 2, lines 50-55)

Lichtenberg et al. teaches in column 2, lines 20-25 and 39-41, that this will provide an alkaline Ni/metal hydride accumulator which can withstand the high temperature short circuit (HTSC) test which is conventionally performed by battery customers in the industry.

Lichtenberg's graphite containing compositions contain from 75 to 90% $\text{Ni}(\text{OH})_2$, preferably 85% and from 1 to 25% graphite, preferably 15% with no inclusion of cobalt or cobalt containing material (column 3 lines 46-57.) Utilizing HTSC tests, the graphite containing compositions are evaluated in comparison to conventional electrodes which contain cobalt, but no graphite (see column 3, lines 58-63, and Figure 1.)

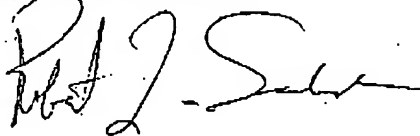
Since Lichtenberg teaches harmful effects caused by cobalt, and further teaches the desirability of completely replacing cobalt with high crystallinity graphite as the conductive material with improved effects, a skilled practitioner would not be motivated modify the teachings of Lichtenberg to achieve an active electrode material comprising high crystallinity graphite and cobalt or cobalt containing material as claimed by Applicants' in amended claim 1. To the contrary, Lichtenberg teaches away from Applicants' claimed electrode material whereas Applicants teach the desirability of the combination of cobalt and high crystallinity graphite,

Lichtenberg teaches the desirable of using high crystallinity graphite **instead of cobalt**. One of skill in the art who is apprised of the teachings of Lichtenberg would be motivated to eliminate cobalt in favor of high crystallinity graphite and would not be motivated to combine cobalt with high crystallinity graphite.

Since there is no motivation to combine Lichtenberg and Yanagihara to achieve Applicants' claimed invention, Applicants respectfully submit that the amended claim 1 is nonobvious over the cited combination. Thus, allowance 1-20 under 35 USC 103(a) is respectfully requested.

Applicants respectfully request withdrawal of all outstanding rejections and respectfully submit that the application stands in condition for allowance. If the Examiner has any questions or suggestions regarding this amendment, the Examiner is respectfully asked to contact Applicants' representative at the telephone number or email address listed below.

Respectfully submitted,



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